

1. A method of determining a cost of automobile insurance based upon monitoring, recording and communicating data representative of operator and vehicle driving characteristics, whereby the cost is adjustable by relating the driving characteristics to predetermined safety standards, the method comprising:

monitoring a plurality of raw data elements representative of an operating state of a vehicle or an action of the operator;

recording selected ones of the plurality of raw data elements when said ones are determined to have a preselected relationship to the safety standards;

consolidating said selected ones for processing against an insured profile and for identifying a surcharge or discount to be applied to a base cost of automobile insurance; and,

producing a final cost from the base cost and the surcharge or discount.

2. The method as described in claim 1 wherein said recording comprises identifying a trigger event associated with a one of the raw data elements having the preselected relationship and recording both the one raw data element and trigger information representative of the trigger event.

3. The method as described in claim 1 further including immediately communicating to a central control station via an uplink information representative of a trigger event associated with a one of the raw data elements.

4. The method as described in claim 3 further including recording trigger event response information generated by said control station.

5. The method as described in claim 1 further including generating calculated data elements from said raw data elements.

6. The method as described in claim 5 further including generating derived data elements from said raw data elements.

7. The method as described in claim 6 wherein said consolidating comprises accumulating said calculated and derived data elements.

8. The method as described in claim 1 wherein at least a portion of the plurality of raw data elements are within an awareness and selected control of the operator and wherein the method further comprises adjusting by the operator of operator driving behavior thereby causing a change in the portion of raw data elements to obtain the surcharge or discount in the final cost.

9. The method as described in claim 8 wherein the base cost is for a predetermined period of time and wherein the adjusting by the operator is set to occur at predetermined intervals within the predetermined period.

10. The method as described in claim 9 wherein the predetermined period of time comprises two years and the predetermined intervals comprise monthly intervals.

11. A process for acquiring and recording vehicle insurance related data via an on-board computer and recording system comprising steps of:

monitoring a plurality of raw data elements representative of vehicle operating states and driver actions;

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5 recording selected ones of the raw data elements in a vehicle
record file of an on-board data storage device when said ones are identified as
having a relationship material to determination of a cost of insurance;

identifying whether said selected ones comprise a trigger event,
and if so identified, communicating information representative of the trigger
10 event to a central control station for storage in a trigger event file; and,

consolidating said vehicle record file and said trigger event file in
a form for determining a vehicle cost of insurance.

12. The process as defined in claim 11 further including
communicating from the central control station an order for dispatch of an
emergency or assist vehicle in response to the identifying of a special trigger
event determined to require driver assistance.

13. A system of determining a cost of automobile insurance based
upon monitoring, recording and communicating data representative of operator
and vehicle driving characteristics, whereby the cost is adjustable by relating the
driving characteristics to predetermined safety standards, the system comprising:

means for monitoring a plurality of raw data elements
representative of an operating state of a vehicle or an action of the operator;

means for recording selected ones of the plurality of raw data
elements when said ones are determined to have a preselected relationship to the
safety standards;

10 means for consolidating said selected ones for processing against
an insured profile and for identifying a surcharge or discount to be applied to a
base cost of automobile insurance; and,

means for producing a final cost from the base cost and the
surcharge or discount.

14. The system as described in claim 13 further including means for immediately communicating to the central control station via an uplink information representative of a trigger event associated with the run of the raw data elements.

15. The system as described in claim 13 further including means for generating calculated data elements from said raw data elements.

16. The system as described in claim 15 further including generating derived data elements from said raw data elements.

17. A method of generating an actuarial class system for determining vehicle insurance costs for retrospectively adjusting and prospectively setting premiums based on data derived from motor vehicle operational characteristics and driver behavior, comprising:

monitoring a plurality of raw data elements representing vehicle operating states and driver actions;

recording selected ones of the raw data elements in a vehicle record files when said ones are identified as having a relationship material to determination of a cost of insurance;

setting a plurality of actuarial classes associated with corresponding degrees of safety of operation of the vehicle wherein said actuarial classes are derived from aggregating selected ones of the raw data elements; and,

consolidating said vehicle record files with selected actuarial classes for determining a corresponding cost of insurance for the vehicle in correspondence with a one of the actuarial classes.

18. The process for determining a cost of insurance as defined in claim 17 wherein said monitoring and recording steps occur concurrently with actual vehicle operation for acquiring the raw data elements during actual vehicle use.

19. The process for determining a cost of insurance as defined in claim 18 wherein at least a portion of the plurality of raw data elements are within an awareness and selective control of a driver, the process further comprising adjusting by the driver of driving behavior to change said portion of raw data elements for consolidating said vehicle record with an other one of the actuarial classes.

20. An integrated system for extracting from multiple sensors, screening, aggregating and applying for insurance rating purposes, data generated by an actual operation of a specific motor vehicle comprising:

means for extracting a plurality of raw data elements from the multiple sensors wherein the elements are representative of vehicle operating states and driver actions;

means for screening the raw data elements and aggregating selected ones of the raw data elements in a vehicle record file of an on-board storage device when said selected ones are identified as having a relationship material to determination of a cost of insurance for the vehicle;

means for associating the aggregated selected raw data elements with predetermined actuarial classes indicative of a degree of safety of operation of the vehicle; and

means producing a cost of insurance for the vehicle associated with selected ones of the actuarial classes.

data elements, said ~~calculated~~ and derived data elements being further aggregated for association with the selected one of the actuarial classes.

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